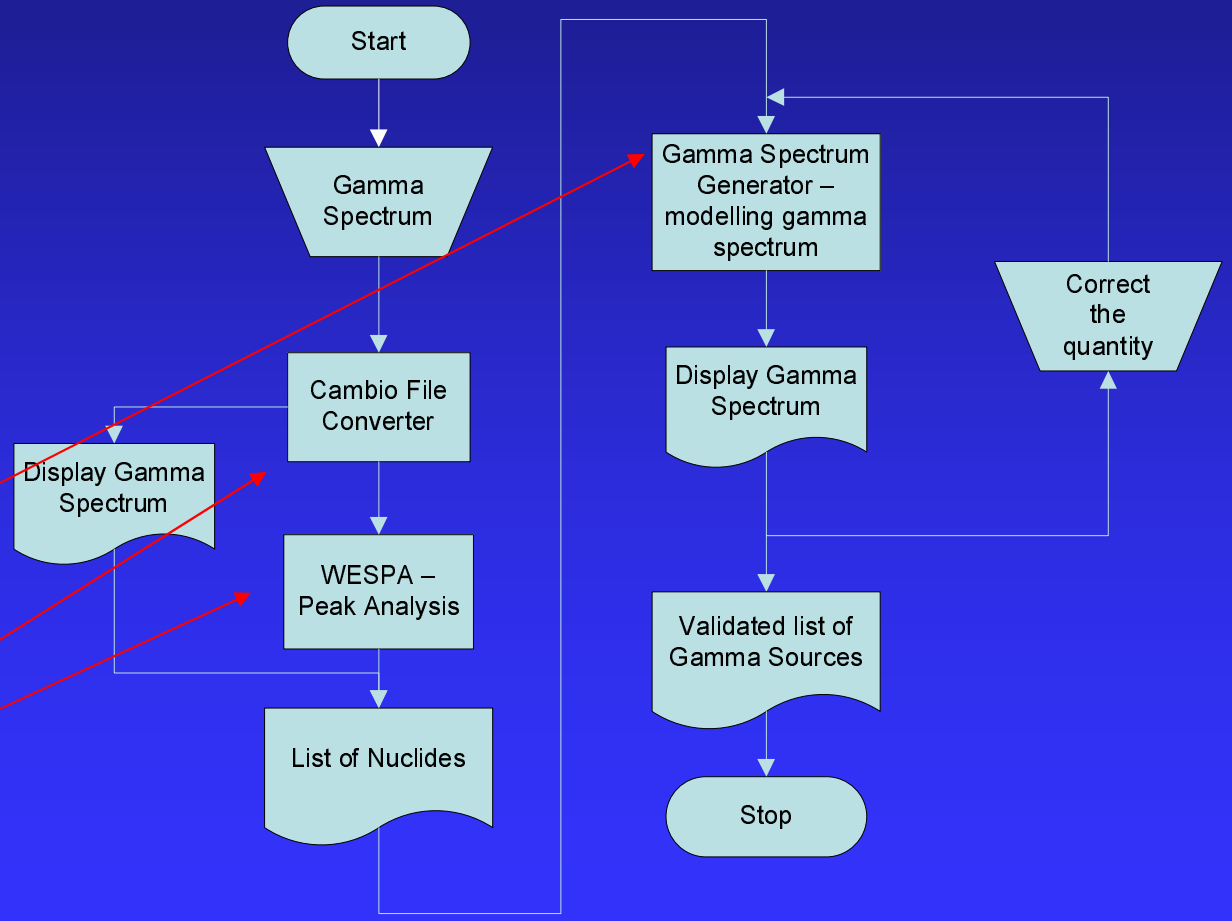
Cambio, WESPA, GSG

Combination of Nucleonica modules

Zs. Soti, J. Magill, R. Dreher

Case study

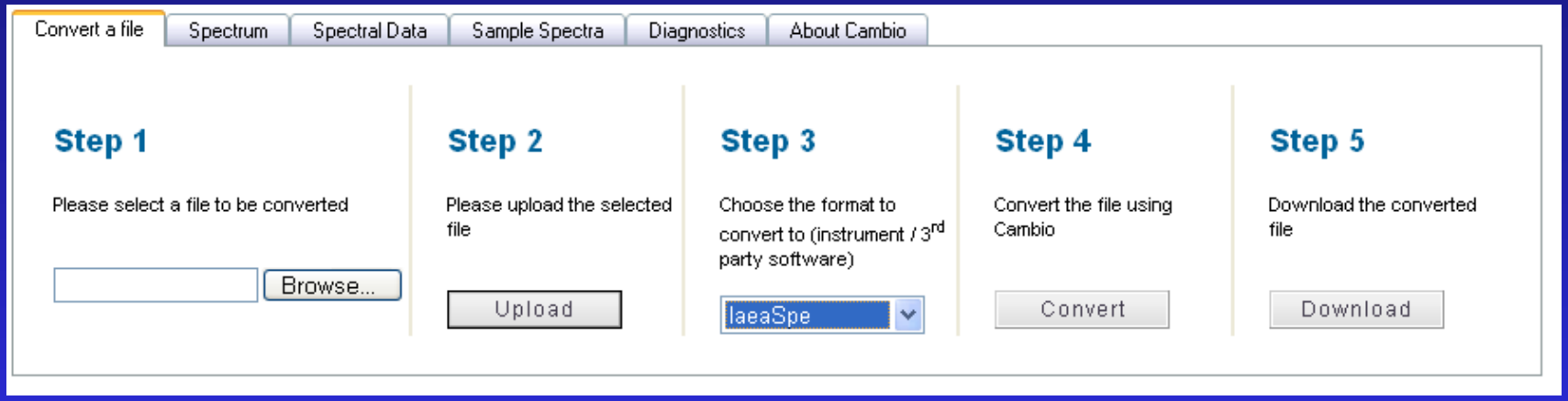
- **Application Centre**
  - Mass Activity Calculator
  - Decay Engine
  - Dosimetry & Shielding
  - Range & Stopping Power
  - In Silico Dosimetry
  - webKORIGEN
  - Decay Engine for Large Nuclide Sets
  - Universal Nuclide Chart
  - Transport & Packaging
  - Nuclide mixtures
  - Nucleonica Scripting
  - Gamma Spectrum Generator
  - Gamma Spectrum Generator Pro
  - Photon Interaction with Matter
  - easy Monte Carlo
  - Cambio file Converter
  - WESPA
  - Gamma Library
  - webGraph

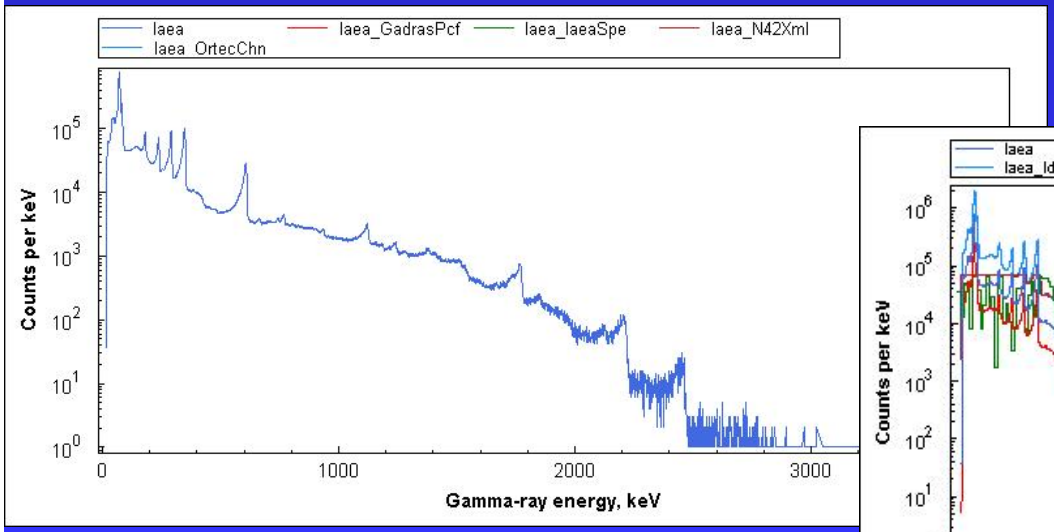


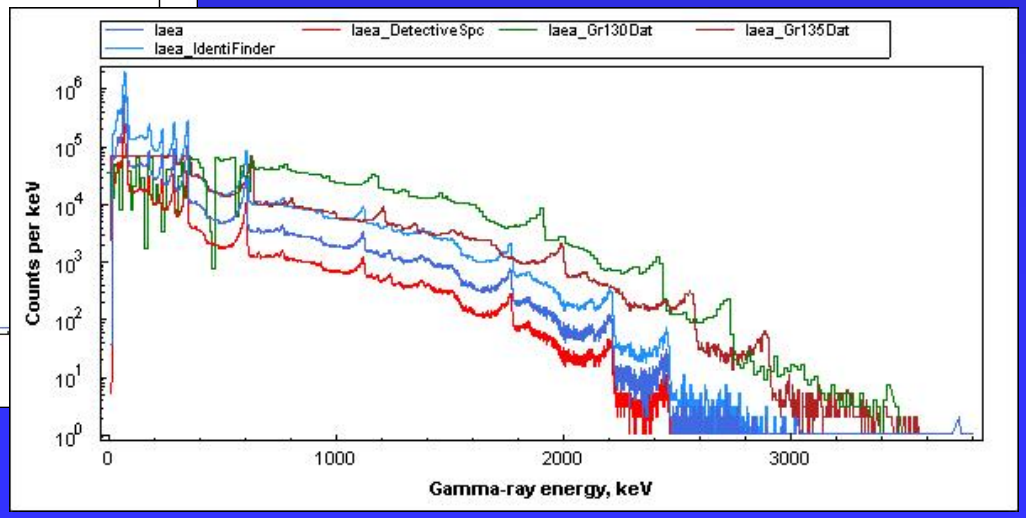
Cambio

- G. Lasche has developed
- Read and display spectral data of different detector systems (more than 50 file formats)
- Convert spectrum to another 7 commercial formats – transfer spectral data between different analysis tools
- Compare different gamma spectra

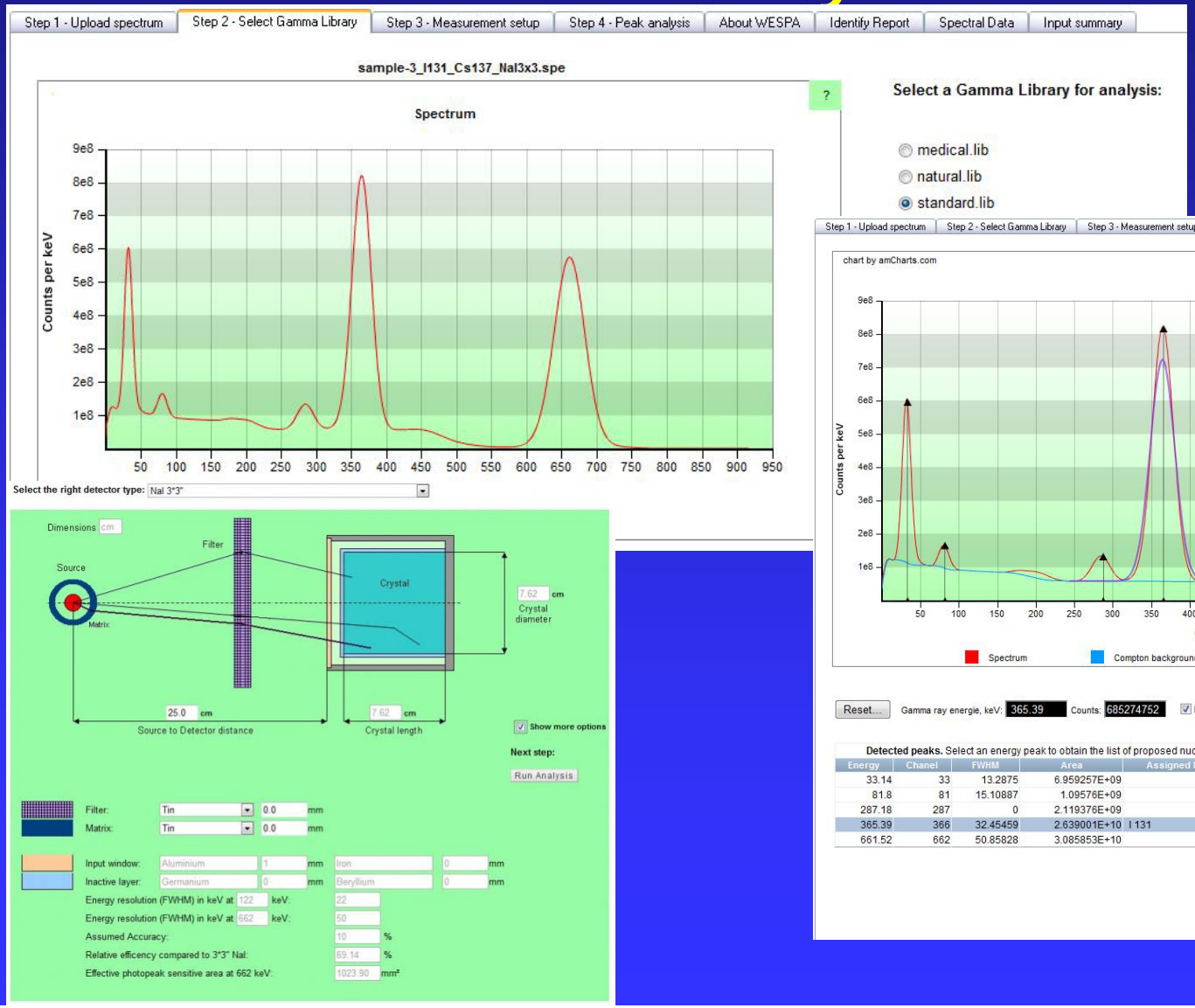
Cambio – Convert, Display, Compare

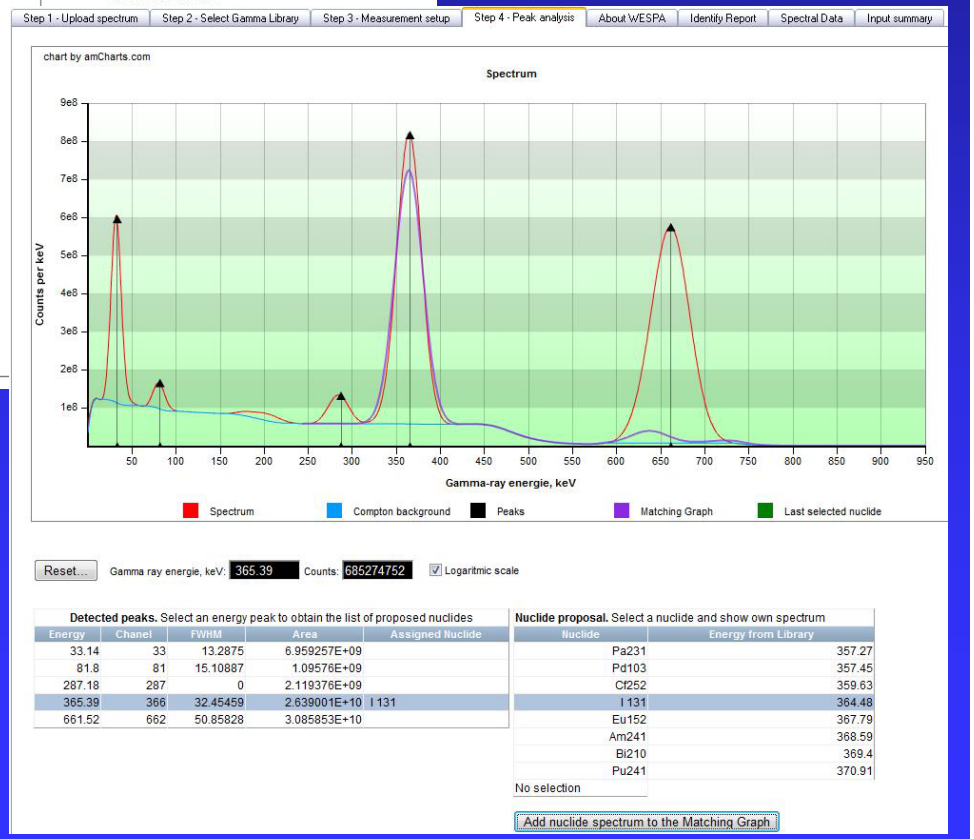






WESPA – Web based Spectrum Analyser

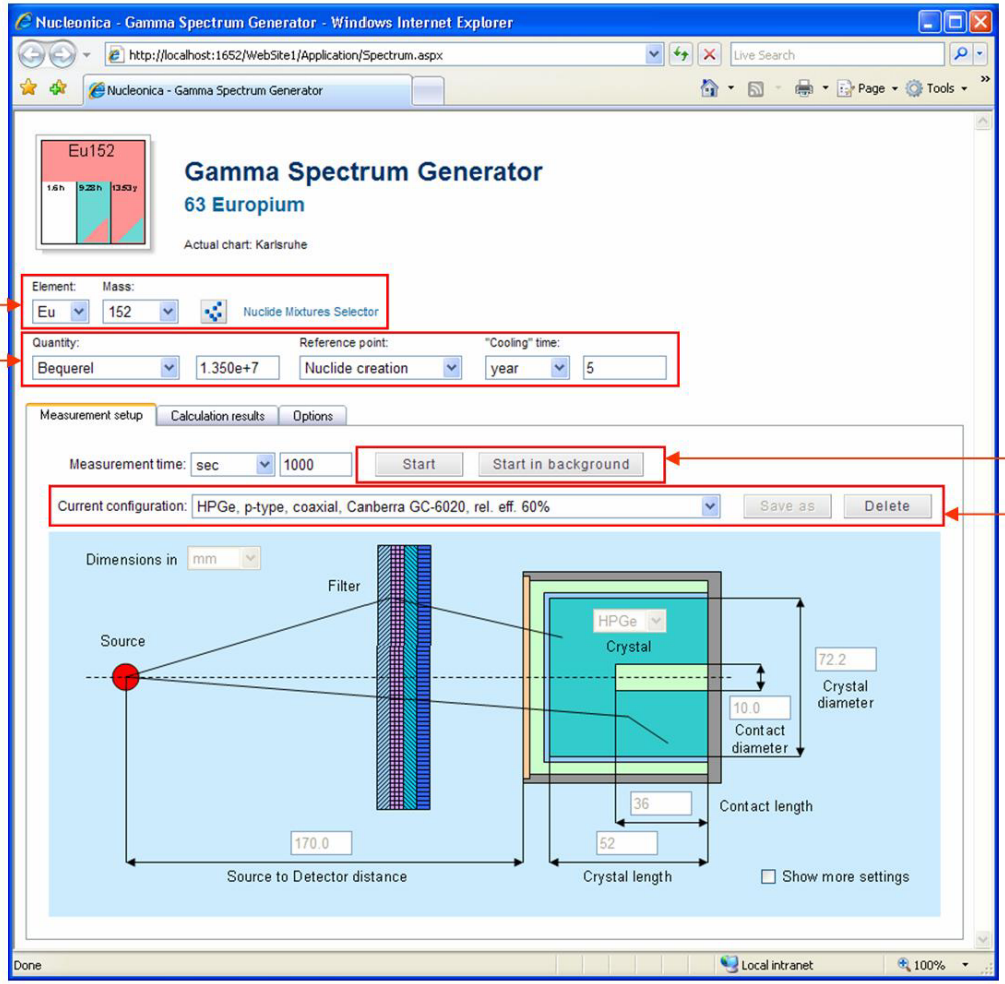




Gamma Spectrum Generator

An arbitrary individual nuclide or a pre-defined mixture of nuclides can be selected as a radiation source

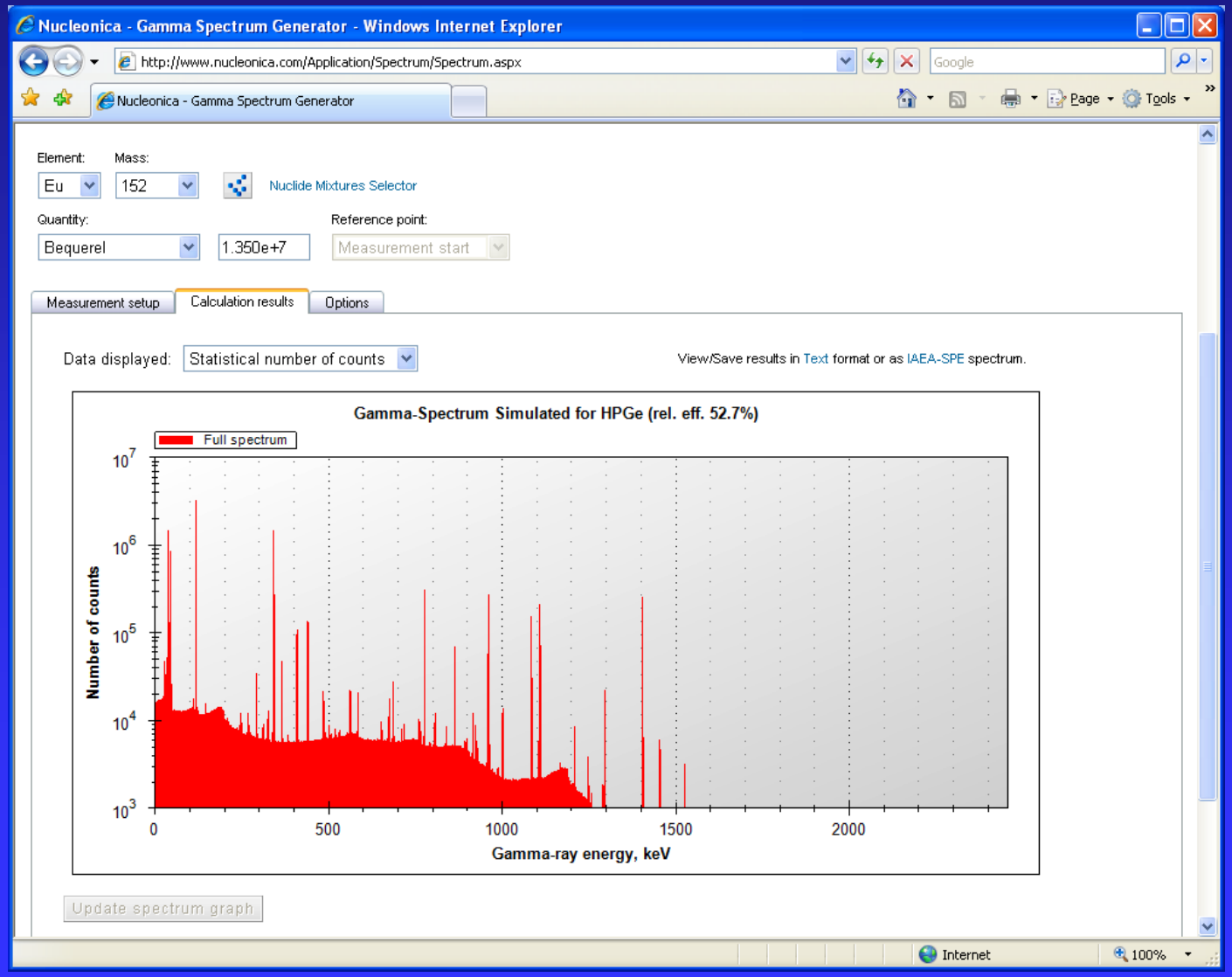
The quantity (activity, mass or number of atoms) of a nuclide or a mixture can be specified either at the moment of its production or at the spectrum measurement starting point of time. In the former case controls for specifying duration of a source cooling time interval become available.



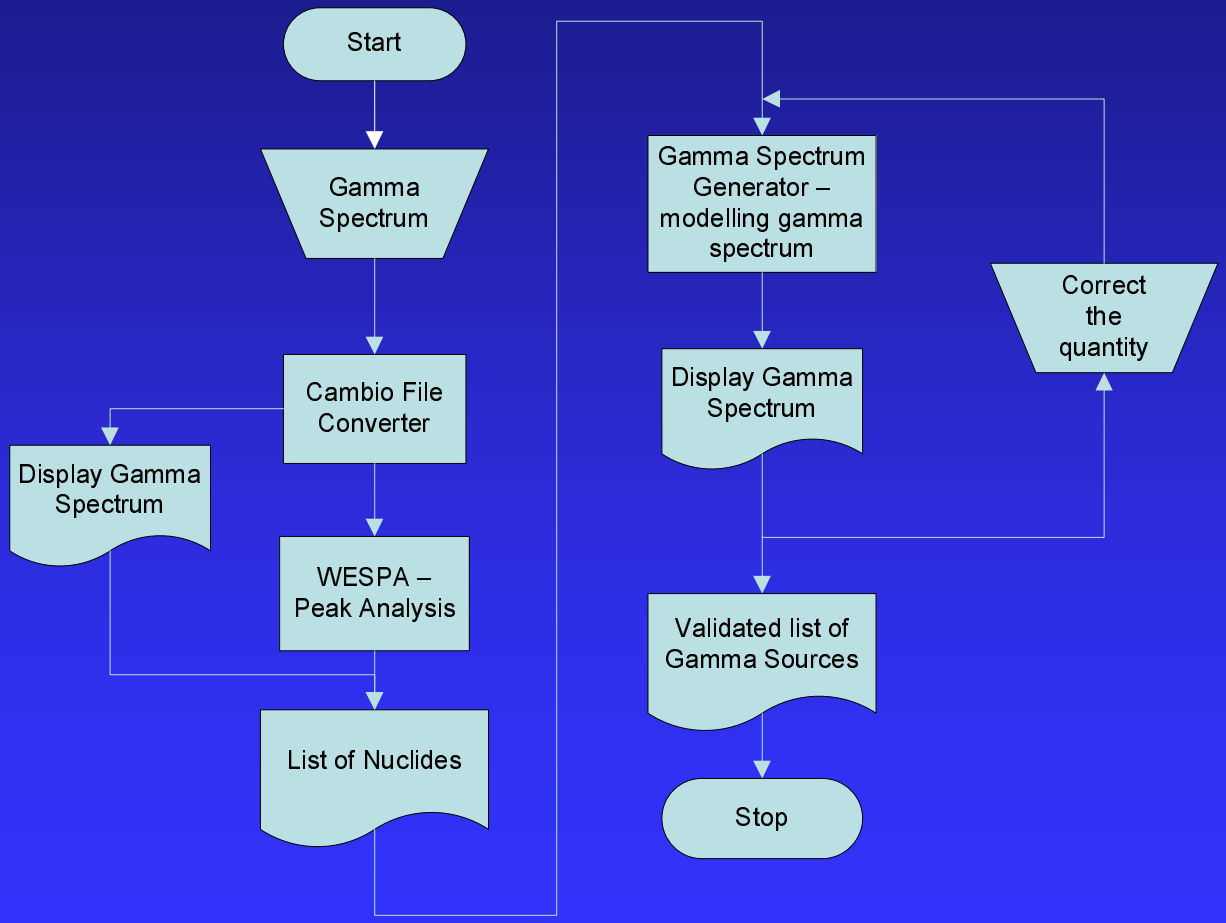
Calculations can be started on-line or in a background mode

A suitable γ-spectrometer can be chosen from 6 pre-defined configurations, which include 2 coaxial HPGe (50% and 150%) detectors, low-energy (LEGe) and broad-energy (BEGe) HPGe detectors, and 2 NaI detectors (Ø3″×3″ and Ø2″×1″). In addition, user's specific configurations can be managed.

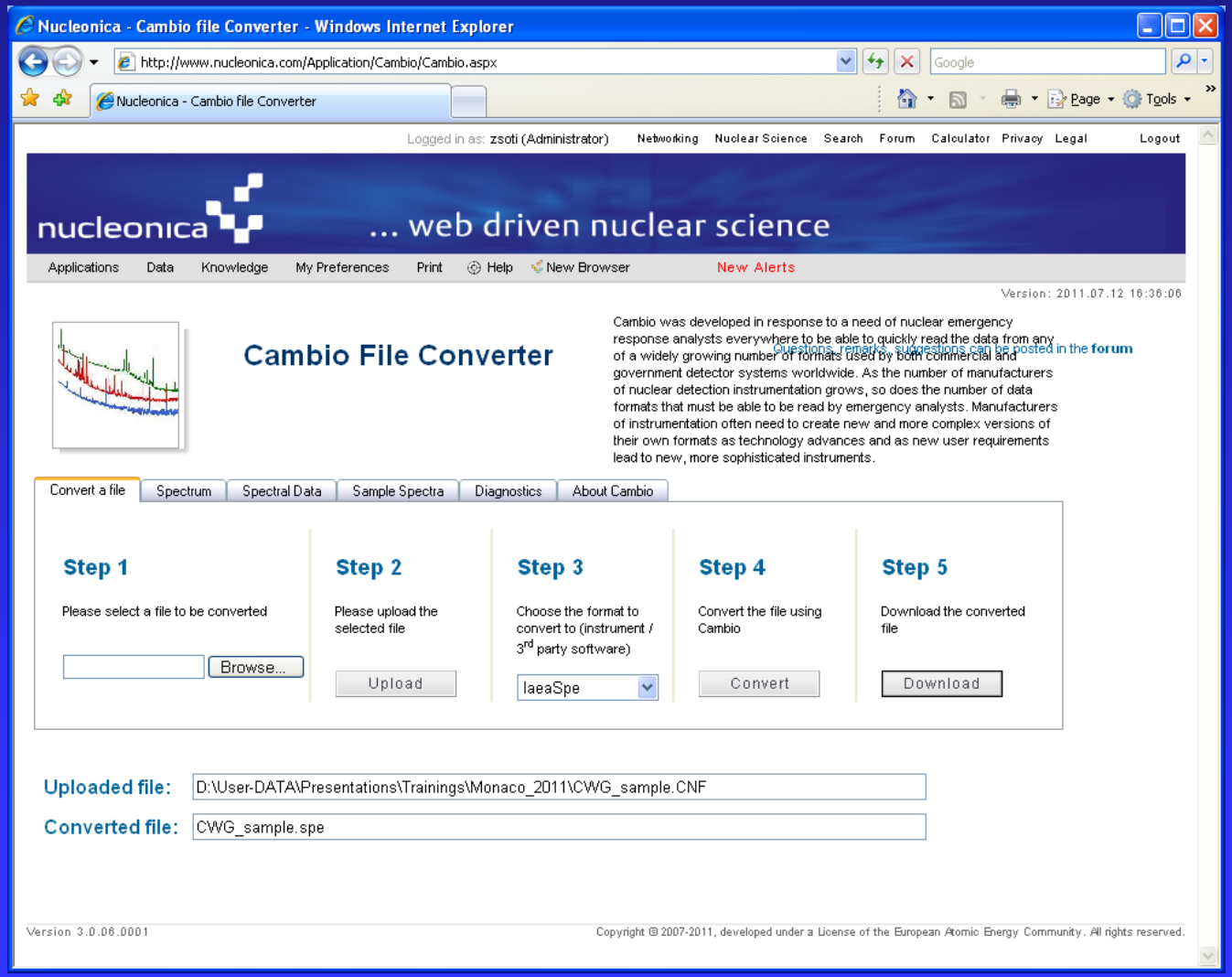
GSG


Nucleonica - Gamma Spectrum Generator - Windows Internet Explorer
http://www.nucleonica.com/Application/Spectrum/Spectrum.aspx
Nucleonica - Gamma Spectrum Generator
Element:
Mass:
Eu
152
Nuclide Mixtures Selector
Quantity:
Reference point:
Bequerel
1.350e+7
Measurement start
Measurement setup
Calculation results
Options
Data displayed:
Statistical number of counts
View/Save results in Text format or as IAEA-SPE spectrum.
Gamma-Spectrum Simulated for HPGe (rel. eff. 52.7%)
Full spectrum
Number of counts
Gamma-ray energy, keV
Update spectrum graph
Internet
100%

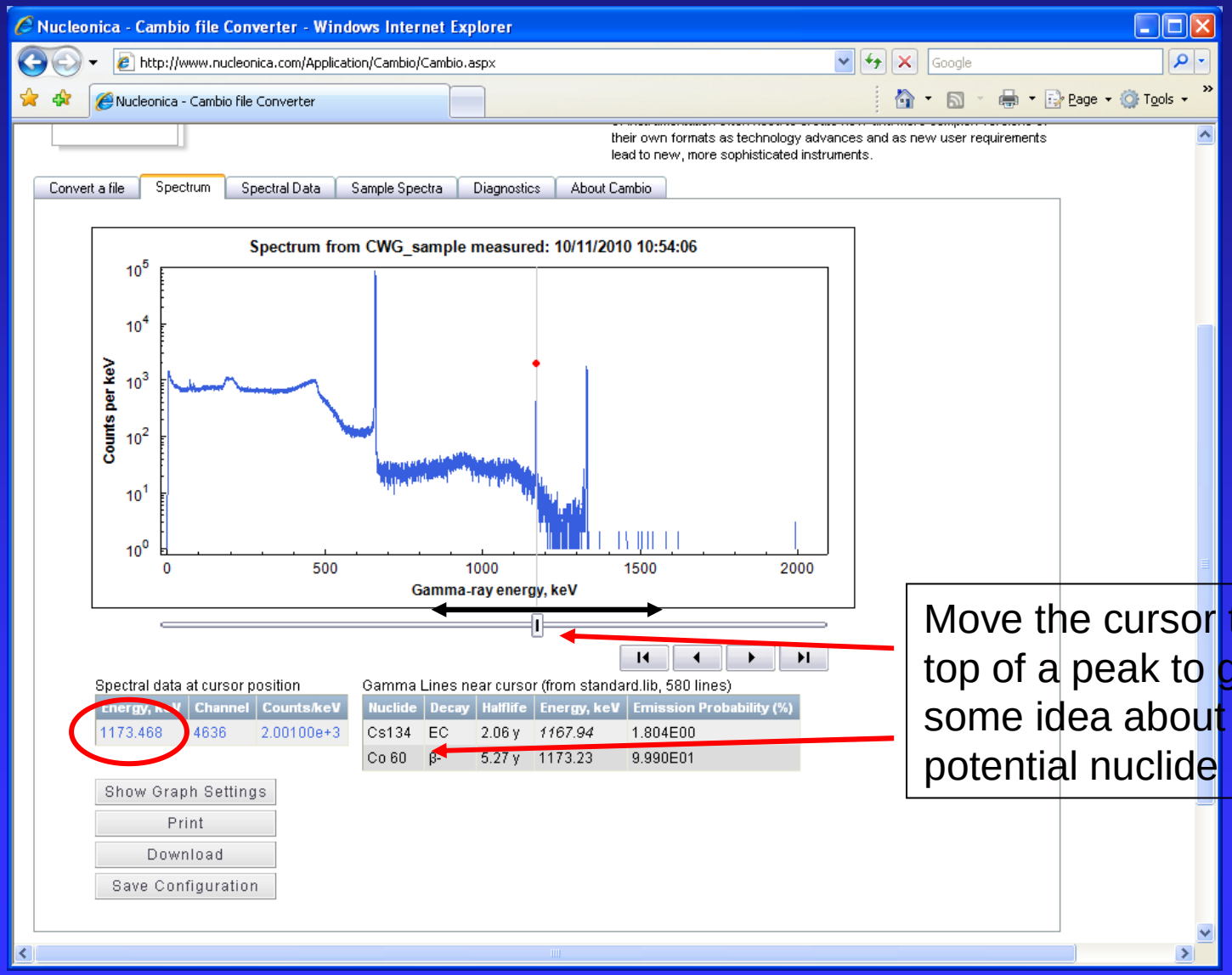
Case study


Start
Gamma Spectrum
Cambio File Converter
Display Gamma Spectrum
WESPA – Peak Analysis
List of Nuclides
Gamma Spectrum Generator – modelling gamma spectrum
Display Gamma Spectrum
Correct the quantity
Validated list of Gamma Sources
Stop

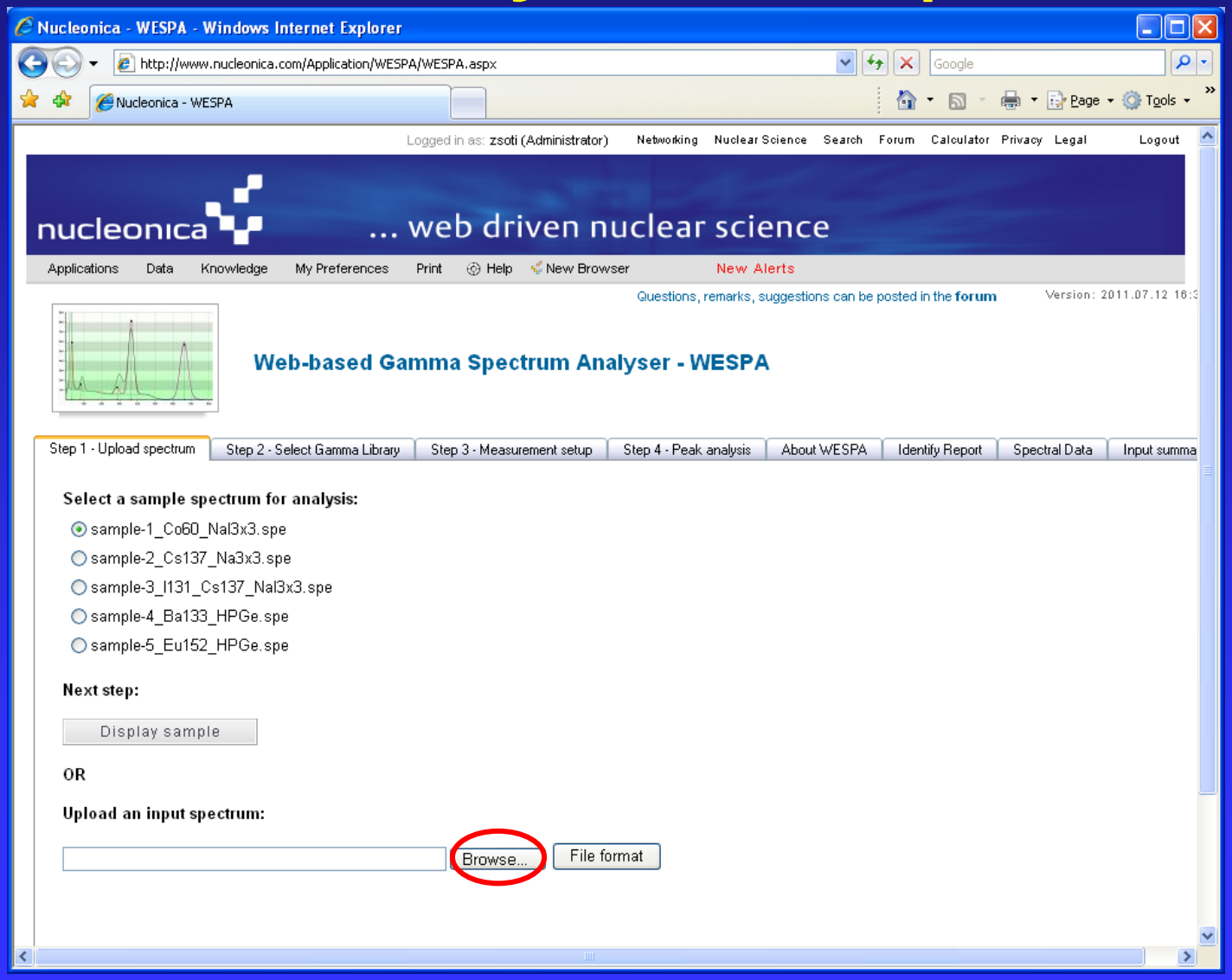
Cambio: Convert the spectrum file from format CNF to SPE



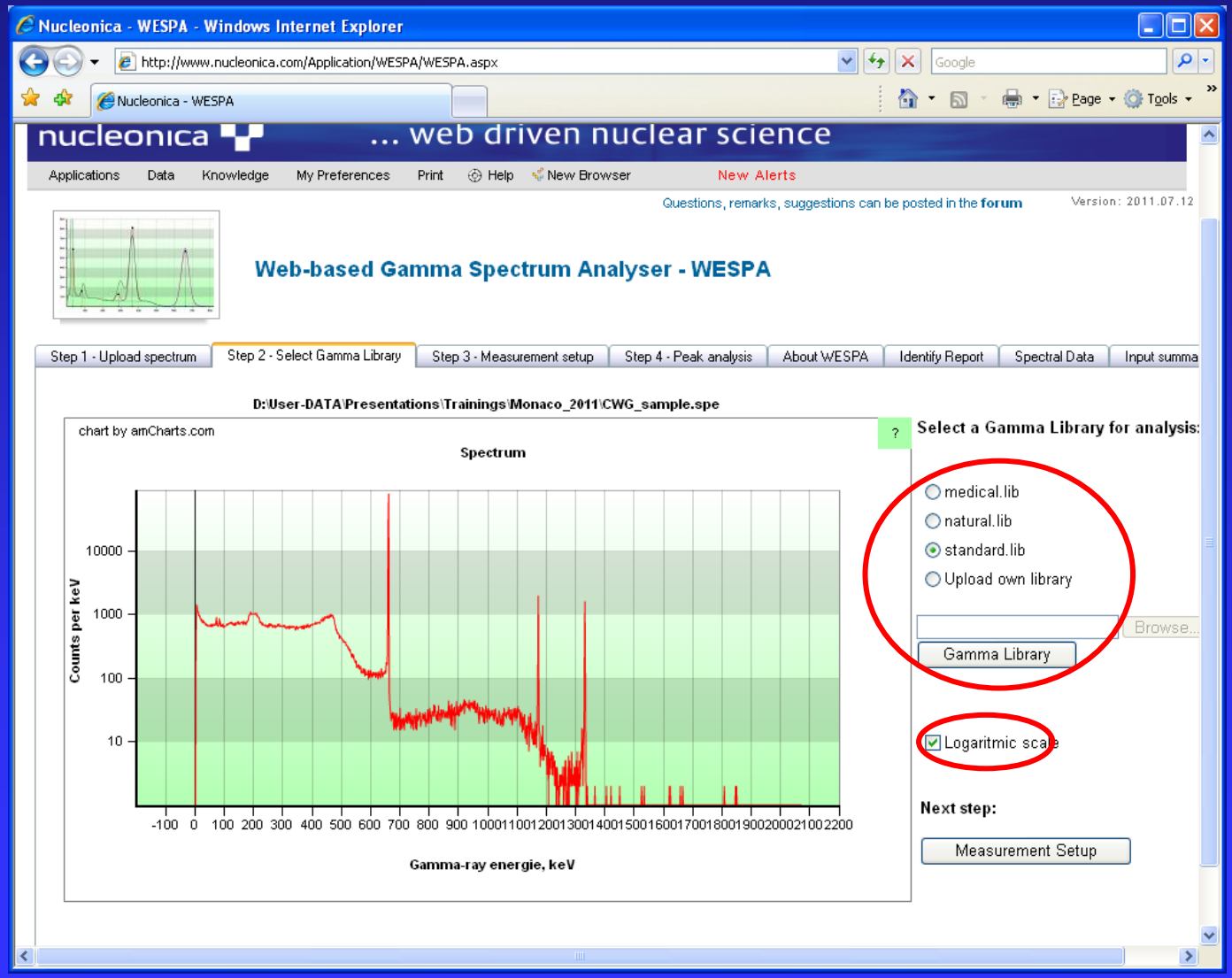
Cambio: Display spectrum



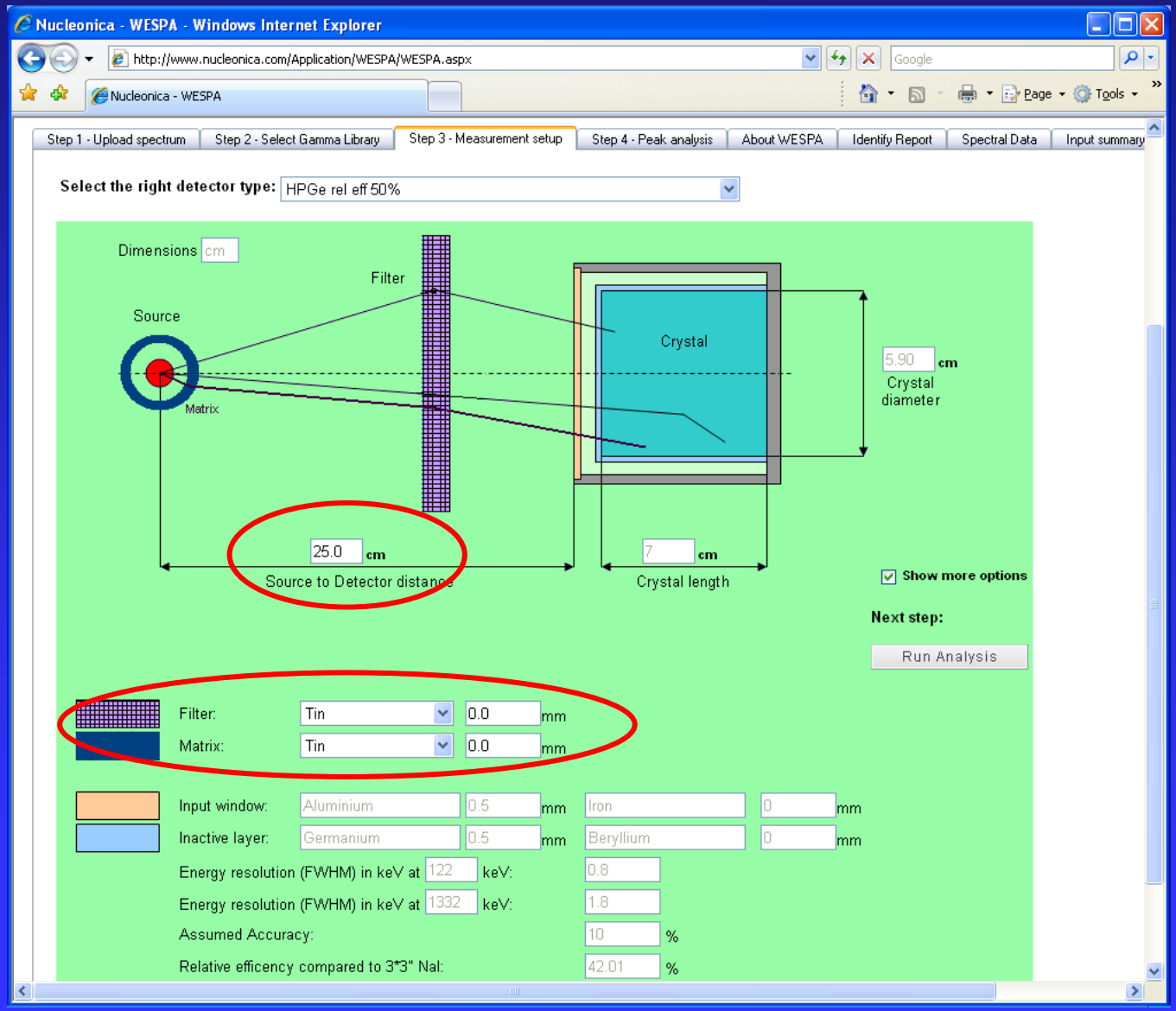
WESPA: Analyse the spectrum



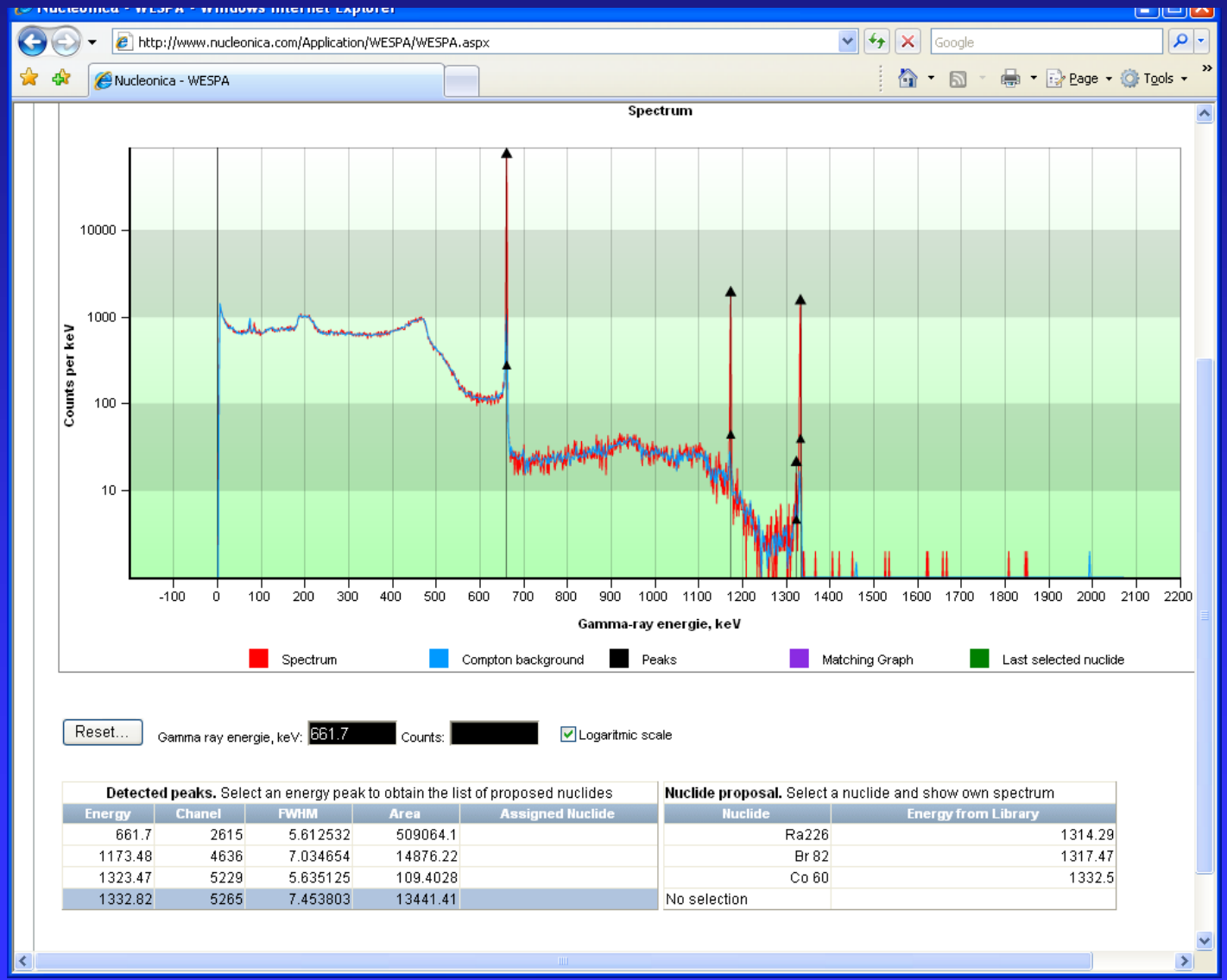
WESPA: Display



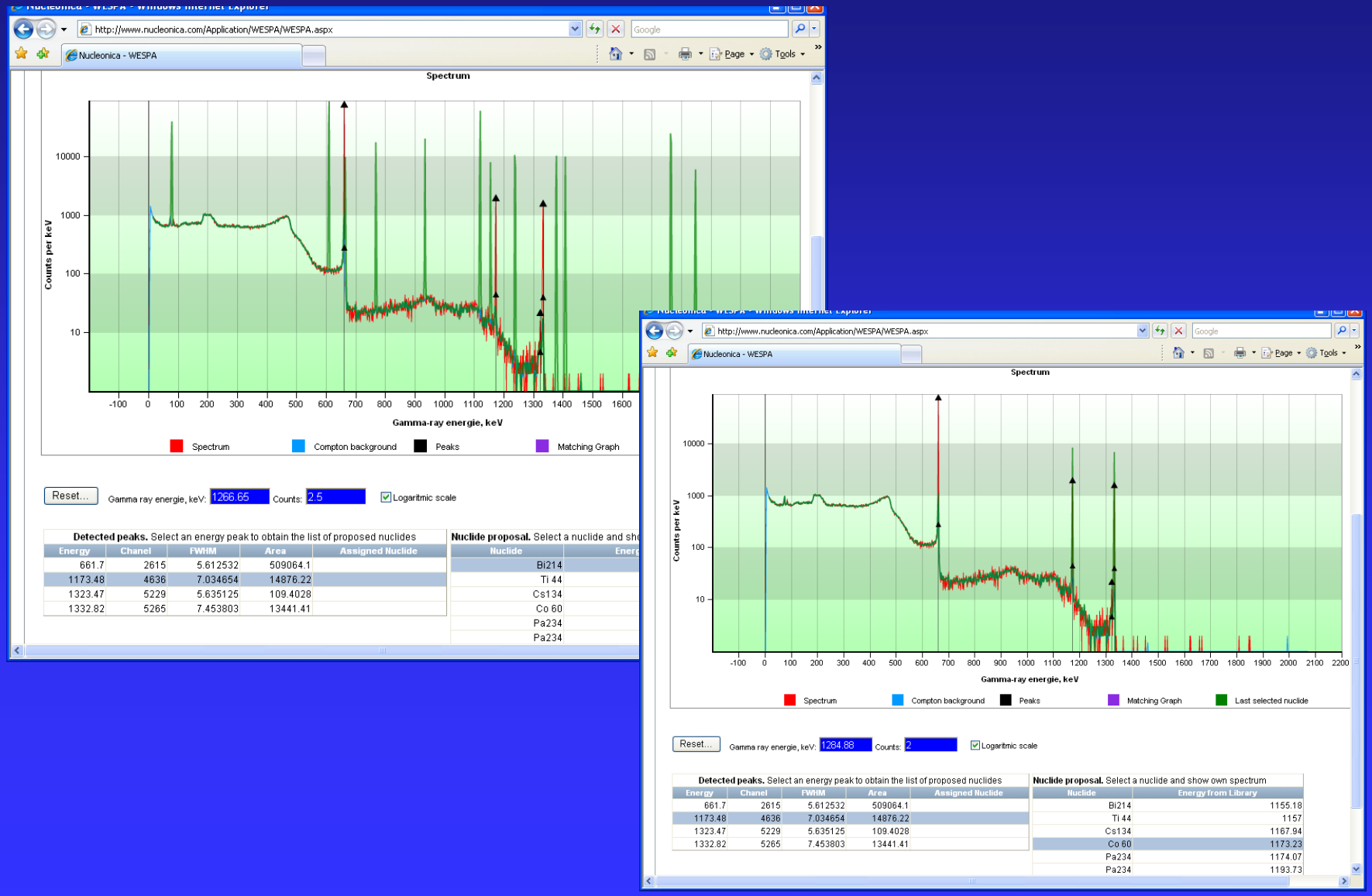
WESPA: Measurement setup



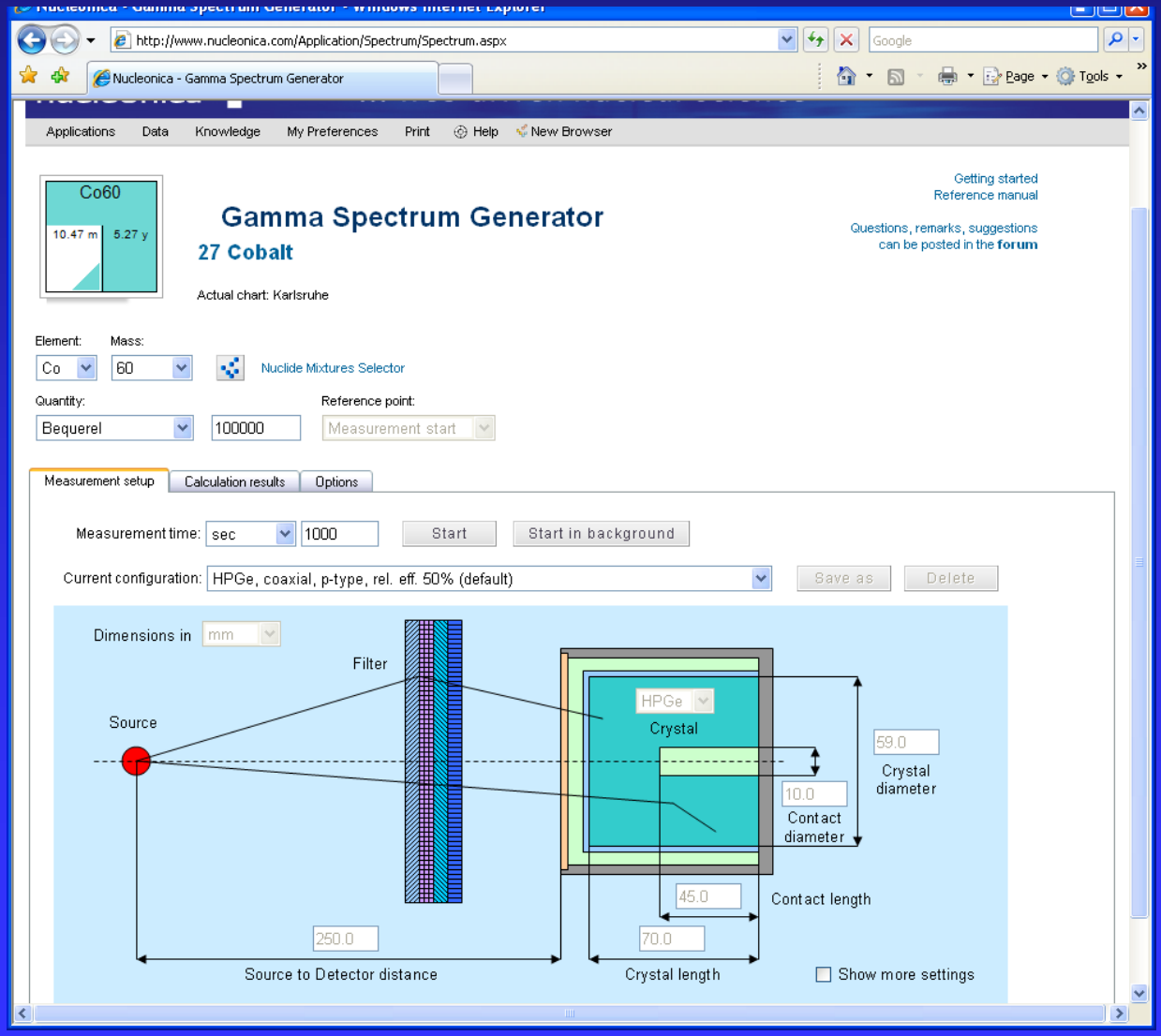
WESPA: Analysis



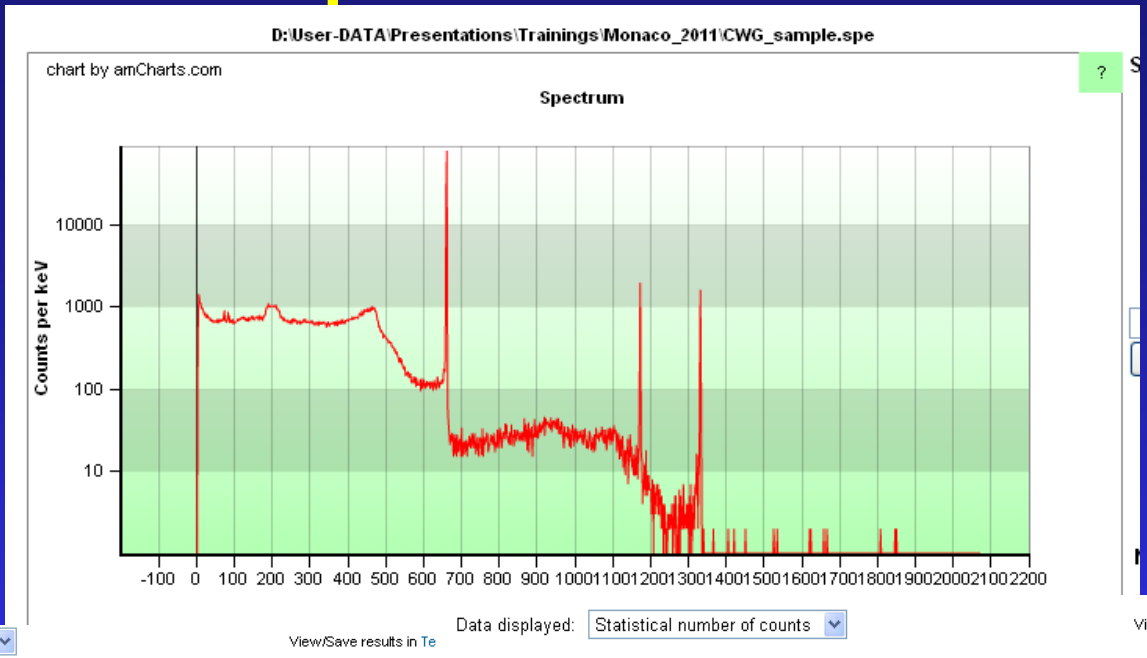
WESPA: Peak fitting



GSG: Measurement setup



GSG: Spectrum modelling



Data displayed: Statistical number of counts

View/Save results in Te

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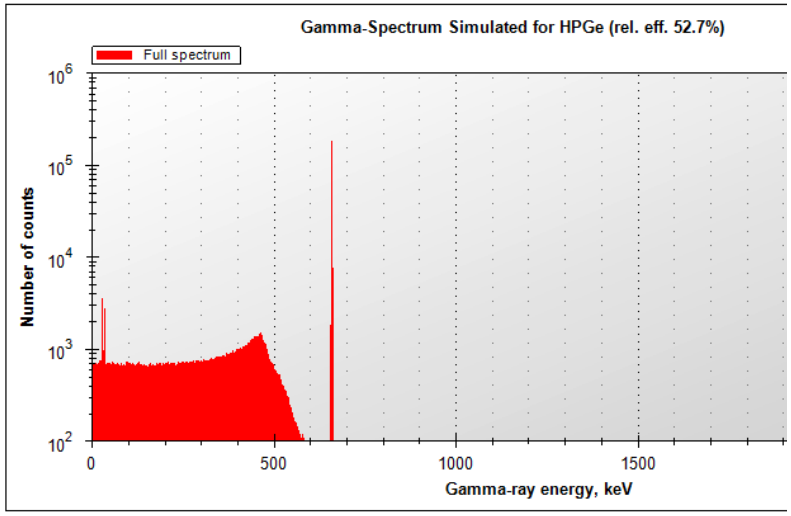
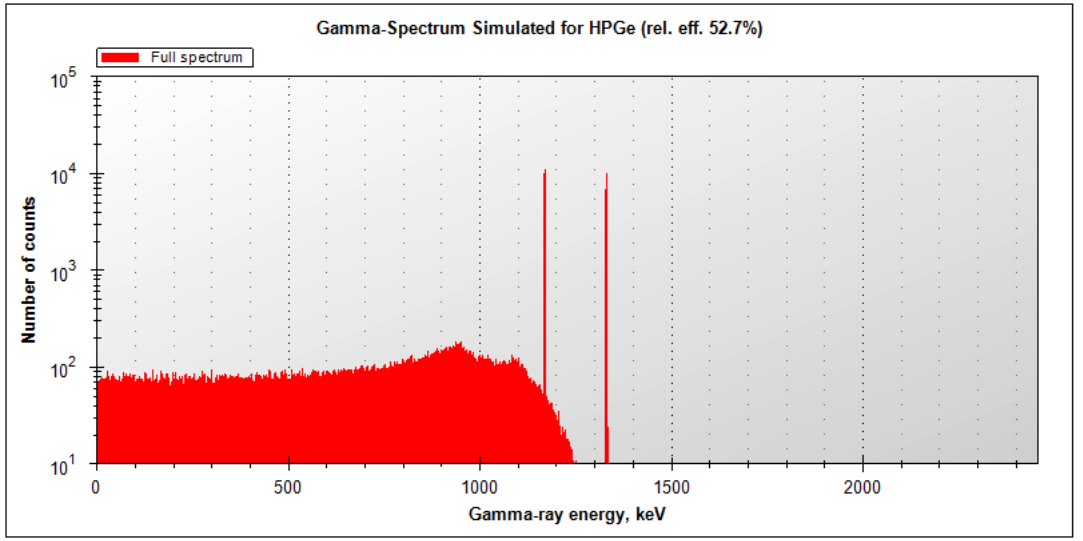
View/Save results in Text format or as IAEA-SPE spectrum.





Update spectrum graph

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